

CLAIMS

1. A process for the production of cumene, which comprises producing cumene from cumyl alcohol and hydrogen with a
5 dehydration catalyst and a hydrogenation catalyst, wherein the dehydration catalyst and hydrogenation catalyst are alternately packed so as to form n layers (n is an integer of 3 or more) or are packed as a mixture thereof in a reactor.

2. The process according to claim 1, wherein n is an even
10 number of 4 or more.

3. The process according to claim 1, wherein the dehydration catalyst is activated alumina.

4. The process according to claim 1, wherein the hydrogenation catalyst is a catalyst containing a metal of
15 Group 10 or 11 of the Periodic Table.

5. The process according to claim 4, wherein the metal is palladium.

6. A process for producing propylene oxide, which comprises the following steps:

20 oxidation step: a step of obtaining cumene hydroperoxide by oxidizing cumene;

 epoxidation step: a step of obtaining propylene oxide and cumyl alcohol by reacting cumene hydroperoxide obtained in the oxidation step with propylene;

25 dehydration step: a step of obtaining α -methyl styrene by dehydrating cumyl alcohol obtained in the epoxidation step in the presence of a dehydration catalyst;

 hydrogenation step: a step of obtaining cumene by hydrogenating α -methyl styrene in the presence of a

hydrogenation catalyst; and

recycling step: recycling cumene obtained in the
hydrogenation step to the oxidation step, wherein the
dehydration and the hydrogenation steps are the process
5 according to any one of claims 1 to 5.